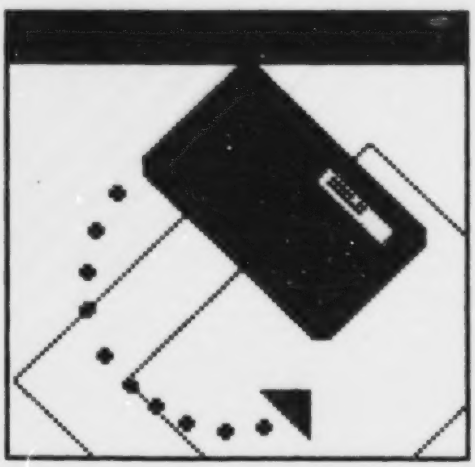
REGIONAL HEALTH FUNDING MANUAL

1999-00 Funding



Health Resourcing Branch
Alberta Health
March 1999

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REGIONAL HEALTH FUNDING - OVERVIEW

Regional Health Authority funding, excluding Province Wide Services, is $2.545 billion for 1999-00 (March 11, 1999 announcement). This represents new funding of $174.2 million from the previous year comparable funding. This manual documents the calculations behind the allocation to regions of this global funding amount.

Funding for 1999-00 consists of four general components: First, each region was guaranteed, as a minimum, their combined funding (Population Based and Non-Population Based) of the previous year plus three percent. This required $71.1 million in new funding. The remainder of new funding went for population growth compensation ($51.5 million), a "no loss subsidy" payment ($36.5 million) for six regions who would have received a higher share of funding under a full unconstrained population-based allocation of funding, and an additional capital funding component ($15.0 million).

11-Mar-99

REGIONAL HEALTH AUTHORITIES: GLOBAL FUNDING TARGETS

(Excluding Province Wide Services)

RHA	1998/99 Comparable Budget	1999/00 TARGET					Change from 1998/99	
		3% Guarantee	*Population Growth*	*No Loss Payment*	*Capital Equipment*	*1999/00 TOTAL*	$	%
1 – Chinook	136,640,229	4,099,207	1,940,119	616,152	849,541	144,145,248	7,505,019	5.5
2 – Palliser	73,898,674	2,216,960	2,668,228	0	467,077	79,250,939	5,352,265	7.2
3 – Headwaters	42,528,256	1,275,848	1,940,238	0	271,199	46,015,541	3,487,285	8.2
4 – Calgary	718,524,311	21,555,729	20,352,952	15,868,714	4,602,373	780,904,080	62,379,769	8.7
5 – Region 5	36,271,210	1,088,136	986,576	0	227,337	38,573,259	2,302,049	6.3
6 - David Thompson	138,247,323	4,147,420	3,545,389	1,019,521	871,263	147,830,915	9,583,592	6.9
7 - East Central	98,955,730	2,968,672	1,799,518	0	614,936	104,338,856	5,383,126	5.4
8 – WestView	36,050,029	1,081,501	1,585,116	0	229,535	38,946,181	2,896,152	8.0
9 – Crossroads	32,429,589	972,888	822,604	692,095	207,010	35,124,186	2,694,597	8.3
10 – Capital	786,452,316	23,593,569	9,480,257	18,018,190	4,965,455	842,509,787	56,057,471	7.1
11 – Aspen	45,866,465	1,375,994	1,340,917	0	288,031	48,871,406	3,004,941	6.6
12 – Lakeland	84,327,620	2,529,829	1,516,347	0	523,932	88,897,728	4,570,108	5.4
13 – Mistahia	68,837,964	2,065,139	1,430,491	0	428,836	72,762,430	3,924,466	5.7
14 – Peace	19,742,328	592,270	208,717	0	121,793	20,665,108	922,780	4.7
15 – Keeweetinok	16,265,766	487,973	500,089	0	102,291	17,356,119	1,090,353	6.7
16 – Northern Lights	24,035,757	721,073	730,529	0	151,104	25,638,462	1,602,705	6.7
17 – Northwestern	11,878,060	356,342	672,735	297,873	78,287	13,283,296	1,405,236	11.8
TOTAL	2,370,951,627	71,128,549	51,520,823	36,512,545	15,000,000	2,545,113,544	174,161,917	7.3

3% MINIMUM GUARANTEE

The Health Minister announced on March 11, 1999 that for 1999-00 all regional health authorities would receive at least a 3.0 percent funding increase over their 1998-99 comparable funding. This minimum guarantee provision required $71.1 million in additional funding for 1999-00. The guarantee results in greater stability - an important characteristic of funding for regions.

FUNDING FOR POPULATION GROWTH

Regional funding for 1998-99 included provision for population growth to September 30, 1998 (mid-point of fiscal year). Additional 1999-00 funding for projected annual population growth (to September 30, 1999) totalled $51.5 million and was calculated as follows:

1. Projected annual growth rates for the population (registered persons by age, gender and socio-economic group) in each RHA were based on the historical growth rates from March 31, 1997 to March 31, 1998, scaled by the same factor to produce an overall population increase equal to the expected population growth of 2.2% for 1999-00.

2. The scaled rates were applied to March 31, 1998 population to produce an estimated annual population growth for 1999-00 of 62,715 persons (all RHAs).

3. The annual population growth for each RHA was valued using the per capita rates developed for population based funding, which were based on a total pool size equal to the comparable previous year funding ($2.371 billion) less $0.255 billion for the 1999-00 *protection, promotion, prevention* pool and non-population based funding. Additional funding allocations for population growth for the *protection, promotion, prevention* activity pool and non-population based funding were calculated as 2.2% of the corresponding 1999-00 regional amounts for each RHA.

1999-00 FUNDING for Population Growth

RHA	RHA NAME	Projected Annual Population Growth	Funding Value For Growth	PPP 2.2%	Non Pop. 2.2%	Total Funding for Population Growth
		(persons)	($)	($)	($)	($)
1	Chinook	922	1,686,044	120,130	133,945	**1,940,119**
2	Palliser	2,239	2,502,382	60,409	105,437	**2,668,228**
3	Headwaters	2,269	1,836,480	51,465	52,292	**1,940,238**
4	Calgary	31,361	18,742,836	578,954	1,031,162	**20,352,952**
5	Region 5	1,009	889,163	41,298	56,115	**986,576**
6	David Thompson	5,354	3,266,227	145,806	133,355	**3,545,389**
7	East Central	1,671	1,446,987	72,753	279,778	**1,799,518**
8	WestView	1,662	1,437,207	61,633	86,276	**1,585,116**
9	Crossroads	734	762,421	30,264	29,919	**822,604**
10	Capital	7,697	7,893,057	567,352	1,019,848	**9,480,257**
11	Aspen	711	1,208,822	61,073	71,022	**1,340,917**
12	Lakeland	2,293	1,366,436	90,301	59,611	**1,516,347**
13	Mistahia	2,162	1,164,227	62,552	203,713	**1,430,491**
14	Peace	(162)	128,997	15,806	63,915	**208,717**
15	Keeweetinok	360	400,405	31,894	67,790	**500,089**
16	Northern Lights	1,541	617,964	29,166	83,399	**730,529**
17	Northwestern	892	560,861	24,524	87,350	**672,735**
	Total	**62,715**	**45,910,516**	**2,045,380**	**3,564,927**	**51,520,823**

▫ CAPITAL EQUIPMENT

1999-00 funding includes $15.0 million in new funds for capital equipment requirements. This was in keeping with the need to increase the amount of money for capital equipment purchases by regions identified in the Report of the *Health System Funding Review Committee* (August 1998). The regional distribution of the $15.0 million additional funding was based on the regional distribution of the RHA global funding amount (Population and Non-Population Based).

NO LOSS SUBSIDY PAYMENT

Six regions (Chinook, Calgary, David Thompson, Crossroads, Capital, Northwestern) would have increased their funding share for 1999-00, relative to comparable 1998-99 funding allocations, under a strict funding formula allocation (population and non-population based). This means that with the guaranteed minimum funding increase for all regions in 1999-00, these six regions are effectively subsidizing some of the funding of the other eleven regions.

To partially address this inequity, $36.5 million in new funding (No Loss Subsidy Payment) was allocated to these six regions. This moves the funding allocation closer to the principle that regional funding shares should be equal to the relative shares of health expenditure needs as determined by population based funding.

To determine the No Loss Subsidy Payments, the comparable 1998-99 funding total was first allocated to regions under a "full formula" calculation, based on currently available data, and then compared to the actual funding allocations for 1998-99. The dollar differences for the resulting six "underfunded" regions (regions whose full formula allocation was higher than their actual comparable 1998-99 funding) became the No Loss Subsidy Payments, financed from new funding available for this purpose.

The calculations of the "full formula" components - Population Based and Non-Population Based Funding - are described in the following sections.

1999-00 FUNDING for No Loss Subsidy Payment

RHA	1998/99 Comparable Funding	Full Formula Allocation	Dollar Difference Negative	Dollar Difference Positive	No Loss Subsidy Payments
1 – Chinook	136,640,229	137,256,381	0	616,152	616,152
2 – Palliser	73,898,674	72,824,291	(1,074,383)	0	0
3 – Headwaters	42,528,256	42,286,246	(242,010)	0	0
4 – Calgary	718,524,311	734,393,025	0	15,868,714	15,868,714
5 – Region 5	36,271,210	34,303,894	(1,967,316)	0	0
6 – David Thompson	138,247,323	139,266,844	0	1,019,521	1,019,521
7 - East Central	98,955,730	91,875,367	(7,080,363)	0	0
8 – WestView	36,050,029	34,743,342	(1,306,687)	0	0
9 – Crossroads	32,429,589	33,121,684	0	692,095	692,095
10 – Capital	786,452,316	804,470,506	0	18,018,190	18,018,190
11 – Aspen	45,866,465	43,282,082	(2,584,383)	0	0
12 – Lakeland	84,327,620	72,438,145	(11,889,475)	0	0
13 – Mistahia	68,837,964	66,710,511	(2,127,453)	0	0
14 – Peace	19,742,328	16,232,434	(3,509,894)	0	0
15 – Keeweetinok	16,265,766	15,663,292	(602,474)	0	0
16 - Northern Lights	24,035,757	19,907,651	(4,128,106)	0	0
17 – Northwestern	11,878,060	12,175,933	0	297,873	297,873
TOTAL	2,370,951,627	2,370,951,627	(36,512,545)	36,512,545	36,512,545

Population Based Funding

Overview

The size of the Population Based Funding component ($2.209 billion) was determined by subtracting the Non-Population Based Funding component ($0.162 billion) from total comparable 1998-99 funding ($2.371 billion).

The Population Based Funding amount is allocated according to the population based funding methodology. The first step is to distribute the Population Based Funding amount into several "buckets" or pools which represent the regional services that the funding is intended to cover: Hospital Inpatient Care / Ambulatory Care / Continuing Care / Home Care / Protection, Prevention, Promotion / Private Clinics. The pool size distribution is based on the 1997-98 spending pattern of the regions in total.

Each one of these buckets is then spread across the seventeen Regional Health Authorities on the basis of the estimated *relative expenditure needs* of each region's population. In other words, the population-based methodology allocates funds to regions on the basis of the relative health expenditure costs (proxy for needs) expected to be incurred for various demographic groups in each of the funding areas. The health care needs vary by region because each region has different numbers and types of people. Basing regional funding shares on the relative health expenditure needs of the population ensures an **equitable** funding allocation across regions.

Since funding is allocated according to the population which is resident in the region, an import/export adjustment is also made to the allocations to compensate for the inter-regional servicing that occurs.

1999-00 Regional Funding

Population Based Summary

(1998-99 Comparable Funding Allocation)

RHA	RHA NAME	31-Mar-98 Registry Population	Net* Per Capita Rate	Population Based Allocation	Net Import/Export Adjustments	Population Based Funding
		1	2	3 (= 1 x 2)	4	5 (3+4)
1	Chinook	146,568	932.4	136,652,693	(5,484,733)	**131,167,960**
2	Palliser	88,585	860.9	76,260,032	(8,228,322)	**68,031,710**
3	Headwaters	71,016	775.1	55,046,329	(15,137,012)	**39,909,317**
4	Calgary	887,933	709.1	629,603,013	57,919,033	**687,522,046**
5	Region 5	52,487	885.5	46,475,073	(14,721,863)	**31,753,210**
6	David Thompson	184,359	823.5	151,814,206	(18,608,976)	**133,205,230**
7	East Central	103,971	943.6	98,103,567	(18,945,371)	**79,158,196**
8	WestView	89,065	639.4	56,946,130	(26,124,417)	**30,821,713**
9	Crossroads	39,266	825.3	32,407,188	(645,468)	**31,761,720**
10	Capital	801,029	801.9	642,333,185	115,780,586	**758,113,771**
11	Aspen	81,497	780.6	63,617,744	(23,563,932)	**40,053,812**
12	Lakeland	107,699	869.8	93,678,836	(23,950,262)	**69,728,574**
13	Mistahia	88,366	671.4	59,327,208	(1,876,357)	**57,450,851**
14	Peace	19,879	783.6	15,577,736	(2,250,513)	**13,327,223**
15	Keeweetinok Lakes	25,731	735.8	18,933,307	(6,351,390)	**12,581,917**
16	Northern Lights	39,716	488.2	19,390,709	(3,273,926)	**16,116,783**
17	Northwestern	19,244	662.2	12,742,538	(4,537,077)	**8,205,461**
	Total	**2,846,411**	**776.0**	**2,208,909,493**	**0**	**2,208,909,493**

* Weighted average capitation rate (weighted by each region's population structure)

Pool Sizes ("buckets")

The starting point for Population Based allocation is to sub-divide the total funding amount ($2.209 billion) into activity pools:

Activity	1998-99 Funding Pool Size	%	1999-00 Funding Pool Size	%
Acute Inpatient	$939.3 M	**46.4**	$1,013.9 M	**45.9**
Ambulatory Care	$448.7 M	**22.2**	$512.4 M	**23.2**
Long Term Care	$405.5 M	**20.0**	$402.0 M	**18.2**
Home Care	$148.8 M	**7.4**	$177.6 M	**8.0**
PPP	$81.8 M	**4.0**	$93.0 M	**4.2**
Private Clinics	n/a	**n/a**	$10.1 M	**0.5**
TOTAL	$2,024.1 Million	**100.0**	$2,208.9 Million	**100.0**

The pool sizes should not be interpreted as targeted funding. Delineation of total funding into activity pools is only done for funding calculation purposes: Regional funding allocation is based on the estimated expenditure needs of the population for the various regional health activities (see next sections). In calculating the expenditure capitation rates for the various regional service categories (activity pools), different costing weight sources are used which are not comparable, or the activity coverage sets are not the same. For example, a full 100% annual activity set may exist for one category regional service, but less than a full activity set for another category of regional service. Consequently, the estimated expenditures are not comparable between regional activities. A proper weighting of the estimated expenditures is achieved by setting a total expenditure pool size for each regional activity, which is then distributed according to the estimated expenditure distribution for that activity determined from the available activity and cost data.

It is essential that the relative pool sizes reflect as closely as possible actual spending distributions if the relative expenditure needs of regions are to be measured accurately. In addition, the import/export adjustment is very sensitive to pool size. Given that nearly three-quarters of total import/export services are inpatient services, the overall size of the import/export adjustment is very much affected by the relative size of the inpatient pool. Pool size distribution can therefore have a significant impact on the final distribution of funding across regions.

The allocation of the Population Based funding into service pool categories for 1999-00 funding was based on the most recent historical (1997-98) regional expenditure distribution, as determined from Management Information System (MIS) data. The MIS chart of accounts was developed in the eighties for consistent financial and non-financial reporting by hospitals across the country. It has been modified for use by the RHAs in reporting their expenditure information. Commencing with the 1995-96 fiscal year, all RHAs are required to submit to Alberta Health financial and statistical MIS data, by facility, which reconcile to the RHA's audited financial statements.

In determining accurate relative pool size, it is important to obtain the most recent expenditure data from the regions. Timeliness is important because the continuing reform of the health sector means the distribution of activity can change from year to year, and as discussed above, shifts in relative pool size can have a significant impact on the final distribution of funding across regions.

For the 1999-00 funding calculations, 1997-98 MIS data was available for 14 of the 17 RHAs - Chinook, Palliser, Headwaters, Calgary, Region 5, David Thompson, East Central, Capital, Aspen, Lakeland, Mistahia, Peace, Keeweetinok Lakes, Northern Lights. The fourteen reporting regions account for the bulk (over 95 per cent) of total spending, and therefore provide a reasonable estimate of the total provincial distribution.

For population-based funding purposes, Health Resourcing (Alberta Health) first reconciles the MIS financial data obtained from the regions with the following categories contained in the audited financial statements:

facility-based inpatient acute
facility-based emergency/outpatient
facility-based continuing care
community and home based
diagnostic and therapeutic
promotion, prevention and protection
research and education
administration
support services
amortization of facilities and improvements

Major discrepancies between the submitted MIS/EDT data and the audited financial statements, particularly for sub-totals, are reported back to the regions for correction.

The next step for Health Resourcing is to use a program developed in the MIS-EDT system to assign the RHA financial data (operating expenditures) to the various funding pools/activities. Excluded are such items as building amortization, unfunded pension accrual adjustment and ancillary operations. All cost allocations are done on a facility-specific basis and then added up to the RHA level. The Expenditure Allocation Analysis Methodology is contained in Appendix A of this manual. For the 1999-00 funding calculations, Alberta

Health sought comments from each region on the resulting expenditure allocations for their region, with opportunity to identify potential problems. Some RHA feedback was received and incorporated by Health Resourcing (RHA recommended adjustments).

Given current MIS reporting, the assignment of MIS data to the appropriate pools is not straightforward in many instances. One of the biggest existing problems is that many regions, including some of the major regions, do not have proper statistics for an appropriate community lab allocation.

After the allocations of RHA expenditures have been made into the various activity pools, Province-wide Services and Non-population Based funded expenditures are taken out, as well as any offset revenue (i.e. the Government only funds regional **net** expenditures). The resulting sub-totals, for only those activity pools distributed by population based funding (acute inpatient, ambulatory care, continuing care, home care, PPP, private clinics), are scaled by a single factor so the new grand total for the activities is equal to the 1999-00 funding pool ($2,209 million). In other words, the MIS data is only used to determine a *distribution* of the funding pools.

Finally, the Ambulatory Care pool ($512.4 million) required further breakdown because a special combined activity file (ACCS + Fee-for-Service) was used for population based allocation (see Estimated Health Expenditures section). Because of some gaps in reported Ambulatory Care Classification System (ACCS) data, for 1999-00 funding it was decided to supplement ACCS data with fee-for-service claim file records for calculating ambulatory care expenditures (an interim measure until comprehensive ACCS data is available). This involved adding to the ACCS data file all fee-for-service ambulatory care related claims that could not be matched with an existing ACCS record. To value these two different activity sets, separate pool sizes were required – one for ACCS and one for the added fee-for-service claims.

The ACCS pool size ($318.9 million) was determined by valuing the ACCS activities with the ACCS costs. The pool size for the activity represented by the fee-for-service claims ($193.5) was calculated as a residual – by subtracting the determined ACCS pool ($318.9 million) from the total Ambulatory Care pool ($512.4 million).

The special pool size for Ambulatory Care FFS ($193.5 million) had to be then further broken down into three sub-components: Emergency / Clinic /Day Procedures ($29.6 million /$126.6 million/ $37.3 million), again for proper weighting of the fee-for-service activity proxies. The three sub-component proportions (.1527/.6545/.1927) were based on the distribution of the actual FFS claim amounts (unmatched records) in these three categories after they had been adjusted by last year's determined multipliers (3.42/8.57/5.256) for inflating fee-for-service amounts to regional expenditures. Because of varying degrees of physician involvement generally associated with Emergency versus Clinic versus Day Procedures, different multipliers are used to capture the relationship between the fee-for-service amounts and regional expenditures.

1997-98 MIS Data
Expenditure Allocation

RHA	Total Cost	*Acute In-Patient*	*Ambulatory Care*	*Continuing Care*	*Home Care*
1 – Chinook	151,235,534	58,619,647	28,567,953	38,928,000	9,806,511
2 – Palliser	84,269,137	33,792,487	14,305,497	23,369,873	4,968,720
3 – Headwaters	49,072,516	14,510,088	11,855,580	14,134,682	3,702,672
4 – Calgary	939,115,310	421,221,556	238,053,428	141,487,877	51,767,555
5 – Region 5	38,289,791	14,135,108	7,274,287	11,366,960	2,230,363
6 – David Thompson	147,131,348	63,625,689	26,493,871	30,269,062	9,182,996
7 – East Central	114,029,334	37,972,875	14,471,272	42,082,083	11,962,787
8 – Westview	(did	not submit)			
9 – Crossroads	(did	not submit)			
10 – Capital	1,032,725,056	467,921,294	191,133,179	169,496,863	57,380,509
11 – Aspen	52,368,458	16,365,725	9,139,835	15,088,054	5,309,008
12 – Lakeland	93,331,627	25,135,090	27,561,301	26,765,624	8,076,931
13 – Mistahia	79,710,397	34,164,177	22,219,477	11,503,049	5,552,982
14 – Peace	21,380,068	7,190,957	4,714,564	5,588,131	1,305,987
15 – Keeweetinok	18,071,625	6,564,693	4,803,088	1,739,837	1,417,884
16 – Northern Lights	27,473,575	11,508,699	9,694,585	1,829,190	1,014,504
17 – Northwestern	(did	not submit)			
RHA recommended Adjustments	0	(5,027,672)	1,647,344	3,392,260	502,803
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Sub-Total	**2,848,203,776**	**1,207,700,413**	**611,935,261**	**537,041,545**	**174,182,212**
LESS:					
Prov-Wide Services	205,386,003	136,631,331	66,293,753	0	1,320,987
Offset Revenue	252,344,102	79,723,251	39,861,625	131,471,509	0
Non-Pop Funding	140,290,039	6,718,890	8,188,427	15,149,926	415,316
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TOTAL	**2,250,183,632**	**984,626,941**	**497,591,456**	**390,420,110**	**172,445,909**

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Expenditure Allocation (continued)

RHA	*Protec/Preven Promotion*	*Private Clinics*	*Other**
1 – Chinook	5,850,618	252,532	9,210,271
2 – Palliser	2,617,746	0	5,214,814
3 – Headwaters	2,290,259	67,600	2,511,637
4 – Calgary	27,369,966	5,792,649	53,422,279
5 – Region 5	1,766,886	0	1,516,186
6 – David Thompson	5,290,907	231,795	12,037,028
7 – East Central	2,670,538	0	4,869,780
8 – Westview			
9 – Crossroads			
10 – Capital	27,968,296	3,519,918	115,304,997
11 – Aspen	2,939,275	0	3,526,560
12 – Lakeland	4,796,226	0	996,455
13 – Mistahia	3,633,120	0	2,637,592
14 – Peace	1,633,704	0	946,725
15 – Keeweetinok	2,131,807	0	1,414,316
16 – Northern Lights	2,786,735	0	639,862
17 – Northwestern			
RHA recommended Adjustments	0	0	(514,735)
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Sub-Total	**93,746,083**	**9,864,494**	**214,366,247**
LESS:			
Prov Wide Services	0	0	1,139,932
Offset Revenue	343,164	77,448	867,099
Non-Pop Funding	3,114,292	0	106,703,188
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TOTAL	**90,288,627**	**9,787,046**	**105,656,028**

*Other is Community Laboratory, Community Rehabilitation, Ancillary Operations, Research and Education

1999/00 Funding

DETERMINATION OF POOL SIZES

	1997-98 *MIS Dist. (Jan 12/99)*	%	1999-00 POOL ALLOCATION	%
Acute Inpatient	984,626,941	45.9	**1,013,887,872**	45.9
Ambulatory Care	497,591,456	23.2	**512,378,771**	23.2
Long Term Care	390,420,110	18.2	**402,022,531**	18.2
Home Care	172,445,909	8.0	**177,570,619**	8.0
Protection-Prevention-Promotion	90,288,627	4.2	**92,971,805**	4.2
Private Clinics	9,787,046	0.5	**10,077,895**	0.5
Total	2,145,160,089	100.0	**2,208,909,493**	100.0

Ambulatory Care pool breakdown:

Total	**512,378,771**		
... ACCS		318,897,694	
... FFS		**193,481,077**	
> Emergency			29,553,737
> Clinic			126,640,661
> Day Proced.			37,286,679

Allocation of Pools

The idea behind population-based regional funding is to distribute the health service activity pools (budget funds) across regions according to the relative health expenditure needs of the regional populations. If all types of individuals had the same level of health care need, equal per capita funding for regions would do the job. However, it is well established that significant variation in health needs results from variations in the population in regards to age, gender and socio-economic status.

Thus, the approach taken by the funding model is to first sub-divide the total population of the province into various population groups with different age, gender and socio-economic characteristics (identifiable from the Population Registry). Then, relative funding rates per capita for each of these groups are calculated based on historical health service utilization data - activity with cost weights attached. This allocation approach assumes that historical health care utilization is a measure of relative health care need, and that age, gender and socio-economic characteristics will be accurate predictors of variations in health expenditure needs (or, more precisely, health expenditure risks). Because of data constraints, allocation of the Protection, Prevention, Promotion pool requires a different approach, although the principle of a population-based allocation underlies the methodology.

i. Population

a. population data source

The official population data source for the funding model - as chosen by the Ministerial Committee on Funding - is the AHCIP *Population Registry* file. Data for the Population Registry is obtained from two systems within Alberta Health - the Stakeholder Registry and the Eligibility and Premium System. The Registry file includes all known residents of Alberta that have been determined to be eligible for Health Care Insurance coverage. This excludes some residents, such as RCMP, who nonetheless may access some RHA services.

Included on the Registry file are the resident's:

- address
- gender
- date of birth
- some socio-economic elements (e.g. eligibility for premium assistance, coverage as a member of Health Canada's Treaty Indian group)

Individuals receiving social service benefits - one of the four socio-economic groups used for population-based funding - are identified from a data file received from Alberta Family and Social Services for March 31 (only those individuals listed in specific support categories).

Various sources are used to maintain the registrations data, and information is updated daily. Alberta Health currently processes retroactive changes to the file as far back as 24 months when notified "after the fact". The population data used for regional funding allocation is active Registry population as of March 31 (as seen six months later at September 30), one year prior to commencement of the funding year. The six month lag for adjustments is necessary to allow for the retroactive adjustments. All registrations with the necessary data elements are included in the calculation of the expenditure and funding capitation rates, but only active registrations with identified age, gender, socio-economic status and RHA residence are used for funding allocation. Thus, a registration record without an RHA or age identifier would be excluded.

There is general satisfaction with using health care registration population, compared to the alternative of incorporating Statistics Canada population data. However, with the registrations data there is an issue of correct residency.

b. population residency

When Alberta's RHAs were originally set up, there was a requirement to be able to assign each Alberta health care registrant to an RHA based on the residency of the registrant. After reviewing various options to achieve this requirement, it was determined that using the postal codes from registrant mailing addresses provided the most viable, although not totally

foolproof, option. A mailing address is required to register for basic health services. A physical address field is available in the population registry, but it is not a mandatory field and not fully utilized. Consequently, registrant postal codes (as at March 31) are used to determine region of residence for purposes of regional funding allocation.

For residents of continuing care facilities, the postal code is set to the postal code of the facility. For health care registrants out of province (sabbatical leave, temporary employment, etc.) who only have their out-of-province address recorded in the Registry file, the last known Alberta postal code obtained from the Statistical Registration History Master is used to determine residency for population-based funding purposes. For registrations with Bad Address Flags, the flag is ignored and the region of residence becomes the location of the bad address postal code.

Assignment of postal codes to an RHA is not as straightforward as one might first think. There are nearly 70,000 active postal codes currently in use in Alberta. However, all of Alberta is not carved up into postal code areas - postal codes only specify to Canada Post where mail is to be delivered, which includes rural post office boxes which are accessed by individuals over an undefined geographic area.

Assignment of each postal code to a region by Alberta Health is based on the "representative points" which Statistics Canada assigns to each postal code to refer to a specific geographic location (a coordinate proxy for the postal code location). For rural areas, one representative point is normally associated with each census enumeration area (in the absence of any cluster, the point is placed at the visual centre of the enumeration area), and thus it can simply be a matter of determining which census enumeration areas fall into which RHA. Where one postal code covers a large geographical area (i.e. multiple representative points) located within two or more RHAs, all registrants are assigned to a single RHA on a "best guess" basis. In general, assignment of postal codes to a region is less reliable for rural areas where postal codes, in many cases, cover mail delivery points over a large geographical area. It is also recognized that postal code may not be the most appropriate residency indicator for population-based funding in cases where addresses are maintained by family, but the dependant's address is different.

While improvements have been explored in determining residency for the health care registrants, it should be remembered that the financial impact from misassigned residents is minimal, on average, for any region as a result of the import/export mechanism of regional funding. For example, even if a region does not receive population based funding for one of its actual residents, it would receive an import funding adjustment for all health services which it provides to that individual. The import/export mechanism, described further on in the manual, compensates regions for residents serviced from outside of their identified region.

c. population groups

Altogether, there are 124 population groups identified for population-based funding. These are the result of:

- *twenty* age groups (<1,1-4,5-9,10-14,15-19,20-24,25-29,30-34,35-39,40-44,45-49,50-54,55-59,60-64,65-69,70-74,75-79,80-84,85-89,90+)
- *two* gender groups (male, female)
- *four* socio-economic groups:
  - aboriginal (those with Treaty Status) below age 65
  - welfare (those who received social assistance during the year) below age 65
  - subsidy (those with subsidized health care premiums) below age 65
  - other (non-premium support)

Composition by socio-economic group:

28	aboriginal (under age 65) groups	[14 age groups x 2 gender groups]
+ 28	welfare (under age 65) groups	[14 age groups x 2 gender groups]
+ 28	subsidy (under age 65) groups	[14 age groups x 2 gender groups]
+ 40	other groups	[20 age groups x 2 gender groups]
= 124	**population groups**	

Each of these groups must be mutually exclusive for the funding model. The Registry file can only include one age or gender per individual, but it is possible that an individual could belong to more than one socio-economic group. For such cases, a decision hierarchy has been imposed with the following order: aboriginal, welfare, subsidy, other.

Per capita rates (estimated annual health expenditures per person) are most sensitive to the *age* factor. Age groups between one and sixty-five years have average per capita health expenditure rates of less than $700. However, the rates increase dramatically for age groups 65 and over:

age	*average per capita rate ($)*
< 1	1,676
1-19	236
20-44	410
45-64	636
65-69	1,446
70-74	2,146
75-79	3,452
80-84	5,643
85-89	9,690
90+	15,978

The four regions with the youngest population (Northwestern, Keeweetinok Lakes, Northern Lights, Mistahia) are all located in Northern Alberta. The region with the oldest population (average age) is East Central, followed by Palliser and then Capital. East Central, with its older population, receives the highest overall population-based per capita funding rate among regions.

Gender is a less important determinant of health expenditure, but it accounts for significant differences in the child-bearing years. On average, females in the child-bearing years incur more than twice as much health care expenditure as males in the same age group.

In addition to age and gender, health expenditure needs have also been determined to be dependent on *socio-economic status* (note: the population-based funding model is structured on the premise that socio-economic status is only a good predictor of health needs for the population under 65 years of age). Per capita rates vary significantly by socio-economic status. The rates are generally highest for those in the *welfare* group (about 5.2 times higher, on average, than the *regular non premium support group* for persons in the same age-gender group), followed by *aboriginal* (about 2.5 times higher than the regular group) and then *subsidy* (about 1.3 times higher than the regular group). The table below shows the Regional Health Authorities with the lowest and highest proportions in the various socio-economic groups:

	Proportion of Population ***Lowest***		*Proportion of Population* ***Highest***	
Welfare <65	Northwestern	1.6%	Capital	4.4%
Aboriginal <65	Palliser	0.5%	Keeweetinok	33.4%
Subsidy <65	Northern Lights	7.1%	Northwestern	16.2%
Other:				
... under 65	Northwestern	48.4%	Northern Lights	79.8%
... 65+	Northern Lights	1.9%	East Central	14.4%

POPULATION COMPOSITION
(by broad age group)

As of March 31, 1998

RHA	Registration Population – percentages				
	0 – 19	20 – 44	45-64	65+	Total
	%	%	%	%	%
1 – Chinook	31.8	35.5	19.7	13.1	100.0
2 – Palliser	29.7	38.2	19.2	12.9	100.0
3 – Headwaters	29.1	40.6	20.2	10.1	100.0
4 – Calgary	27.6	43.1	20.3	8.9	100.0
5 – Region 5	31.9	35.5	20.1	12.6	100.0
6 – David Thompson	31.7	38.3	19.4	10.7	100.0
7 – East Central	30.4	35.2	20.0	14.4	100.0
8 – WestView	32.6	39.2	20.9	7.4	100.0
9 – Crossroads	32.0	36.7	20.1	11.2	100.0
10 – Capital	27.8	40.7	21.0	10.5	100.0
11 – Aspen	33.2	36.6	19.9	10.3	100.0
12 –Lakeland	33.8	35.5	19.3	11.4	100.0
13 – Mistahia	33.1	40.9	18.3	7.8	100.0
14 – Peace	33.7	37.7	18.9	9.6	100.0
15 – Keeweetinok	39.6	39.9	15.2	5.3	100.0
16 – Northern Lights	34.6	45.6	17.9	1.9	100.0
17 – Northwestern	46.5	38.3	11.8	3.5	100.0
Total	**29.6**	**40.3**	**20.1**	**10.0**	**100.0**

POPULATION COMPOSITION
(by socio-economic status)

As of March 31, 1998

RHA	Registration Population - percentages					
	Age 65+	Under 65				
		Aboriginal	Welfare	Premium Support	Non Premium Support	Total
	%	%	%	%	%	%
1 – Chinook	13.1	7.1	3.3	14.3	62.3	100.0
2 – Palliser	12.9	0.5	2.3	12.1	72.1	100.0
3 – Headwaters	10.1	5.1	1.6	10.6	72.6	100.0
4 – Calgary	8.9	1.1	2.8	11.0	76.2	100.0
5 – Region 5	12.6	5.7	2.7	13.4	65.5	100.0
6 – David Thompson	10.7	5.3	3.9	12.6	67.4	100.0
7 – East Central	14.4	0.6	2.0	14.4	68.7	100.0
8 – WestView	7.4	3.3	2.1	9.8	77.4	100.0
9 – Crossroads	11.2	5.0	3.0	12.8	68.0	100.0
10 – Capital	10.5	2.2	4.4	12.5	70.4	100.0
11 – Aspen	10.3	4.2	2.5	13.8	69.2	100.0
12 – Lakeland	11.4	8.9	2.4	12.7	64.5	100.0
13 – Mistahia	7.8	3.8	1.8	12.9	73.8	100.0
14 – Peace	9.6	6.8	2.5	13.2	67.8	100.0
15 – Keeweetinok	5.3	33.4	2.5	8.9	49.9	100.0
16 – Northern Lights	1.9	8.9	2.2	7.1	79.8	100.0
17 – Northwestern	3.5	30.3	1.6	16.2	48.4	100.0
Total	**10.0**	**3.3**	**3.2**	**12.1**	**71.4**	**100.0**

ii. Estimated health expenditures

To derive provincial health care expenditures (proxy for need) for each of the 124 demographic groups, cost weights are attached to activity data for each of the service pools (except Protection, Prevention, Promotion). The cost weights are scaled to produce a total expenditure for each funding pool equal to the total pool size amount. Linkage between the activity files and the registry file then allows the calculated expenditures to be distributed across the 124 identified population groups. The resulting estimated expenditures, by population group, when divided by the provincial population for those groups, determine the provincial per capita rates that are applied to each region's specific population to determine the regional funding allocations.

The population-based funding model therefore requires good utilization and cost (relative resource consumption) data for the health services provided by regional health authorities.

For **utilization/activity** data, 1997-98 is the most recent year for which there is provincial data. Coverage of regional health service activities is relatively comprehensive, although a few gaps currently exist. For example, diagnostic imaging procedures performed in a hospital are not currently recorded in the data sets used for population based funding unless associated with an in-patient or ambulatory care activity. Excluded are patients who come into a hospital under physician referral for a diagnostic imaging exam only.

For population based funding, records on the activity files must be linkable to the Registry file in order to estimate health expenditures by population group. This linkage is accomplished via personal health numbers attached to all clients or recipients of health services. Health Resourcing requests Alberta Health systems personnel to ensure that valid identifiers exist for each record on the utilization files. Activity records for individuals receiving services who cannot be matched up to or found on the March 31 Population Registry must be excluded from the funding rate calculations (but are used for the import/export adjustments wherever possible).

In terms of **costing** weights (or relative values within a service category), the key is to have accurate *relative*, not necessarily actual, costs within a pool. Since the expected health costs are only used to *distribute* a set funding pool size across regions, and not to determine funding levels, it is only necessary that relative costs of services are assigned. Costing is one area of the funding formula where improvements have been actively sought by Alberta Health. In particular, an Alberta costing initiative is in place to collect made-in-Alberta patient-specific cost data for regional health services, and convert them into costs weights required for population-based regional funding.

a. acute hospital care (inpatient)

Acute hospital care activity data were extracted from the 1997-98 CIHI Inpatient file (or

hospital morbidity file). All acute care facilities in Alberta report monthly inpatient separations (about 340,000 records annually) through a standard set of data elements.

After Alberta Health receives the annual file from CIHI (Canadian Institute for Health Information), it first subjects the file to several edits and converts the patient Personal Health Numbers (PHNs) to scrambled numbers to protect patient identities. Province Wide Services inpatient activity is identified separately and excluded for purposes of population based funding. This included, for 1999-00 funding, approximately 350 angioplasty procedures for Capital Health Authority which, because of incorrect coding, were not being properly grouped for identification as Province Wide Services, which would have had significant implications for import/export. Another data record adjustment required by Health Resourcing for 1999-00 funding involved the inclusion of NARG/SARG data from CHA and CRHA (1,506 records).

To calculate expenditures, the activity records are first grouped into RGNs (Refinement Group Numbers) using the RDRG (Refined Diagnosis Related Grouping) methodology. The RGN inpatient grouper version used on the 1997-98 morbidity file was *DRG Refinement Grouper Version 10.0/14.0*. This resulted in each inpatient stay being classified, based on the RDRG system, into one of over eleven hundred and fifty patient types (RGNs).

Cost weights for the inpatient RGNs were derived from approximately 114,000 Alberta costing records for 1997-98. More precisely, the RGN cost weights were relative values derived from the Alberta costing data (see Appendix B - Acute Patient RVI Methodology), weighted by the inpatient pool size. As before, for identified outliers, days beyond the trim point were only valued at the *variable* proportion of the average cost per day - 30% for acuity 0 or 1 (RDRG classification), and 70% for the more severe acuity 2 or 3.

b. hospital based ambulatory care

For the first two years of population based funding (1997-98 and 1998-99), estimated expenditures for hospital-based ambulatory care, in the absence of activity and cost data, were simply based on fee-for-service claims paid to physicians delivering day/night procedures, clinic services and emergency services in hospitals. Although this was only a proxy of RHA expenditure for ambulatory care, it was the best interim information available. To address the ambulatory data gap, Alberta Health has actively pursued comprehensive ambulatory care activity and costing data collection.

With the implementation of the Ambulatory Care Classification System (ACCS), almost all acute care facilities in the province are now reporting ambulatory care visits (about 2.6 million records for 1997-98), with six regions providing cost information. Northwestern is the only health region not submitting any activity data. The activity is classified by ACCS into 398 groups. All Province Wide Services activities in the ACCS file are excluded from the population based funding calculations.

One data adjustment required for the ACCS data related to angioplasty procedure transfers being recorded in Capital Health Authority as an outpatient procedure. Since these are Province Wide Services they should not be included in the population based funding calculations. For 1999-00 funding, all outpatient records where a PTCA was performed were identified and flagged as a Province Wide Service.

To date, there has been incomplete reporting of ACCS data, primarily for Clinics. Consequently, for 1999-00 funding, as an interim measure until comprehensive ACCS data is available, it was decided to supplement the ACCS data with fee-for-service claim file records for calculating ambulatory care expenditures. This involved adding to the ACCS data file all fee-for-service ambulatory care related claims (over half were physician claims for clinic services) that could not be matched with an existing ACCS record. The 442,879 added fee-for-service records account for 15 percent of the total ambulatory care final file used for 1999-00 funding.

Cost weights for the ACCS activities were the average costs derived from the costing regions. Unlike the inpatient costs, these costs were not trimmed, and not scaled to a reach a determined pool size. To value the fee-for-service claims, a residual pool size was calculated by subtracting the value of the ACCS costed activities from the total Ambulatory Care pool.

c. continuing care

As in the two prior years of population based funding, activity data for long term care were derived from Resident Classification System (RCS) data: all residents of provincial continuing care facilities (nursing homes and auxiliary hospitals) are classified once a year ("snapshot") using a standard format. The CMI-based RCS data reported to Alberta Health is client specific and includes demographic information and eight indicators/three domains which place a client into one of seven classification categories (A to G scale) representing increasing acuity levels or resources needed for care. The system holds providers responsible for hours of service by occupational class. RCS data used for 1999-00 funding were collected from a December 1997 - January 1998 classification period involving more than 11,000 residents.

The provincial cost weights for each classification (A to G), used previously for the funding calculations, were derived by Alberta Health several years ago. For the 1999-00 funding calculations, these weights were adjusted by a 3.0 percent inflation factor:

A. $10,368.70
B. $13,511.64
C. $17,553.11
D. $20,665.97
E. $28,079.71
F. $33,985.88
G. $56,851.16

Note: a new resident classification system and new weights are being developed as part of the Continuing Care System Outcomes Development Project - an integrated, automated data collection and client classification system for continuing care.

d. home care

Home care expenditures are based on data from the Home Care Information System (HCIS): all RHAs report monthly home care data through a standard set of data elements. The data are client specific (with PHNs) and include demographic, client classification and service information. Because of some concerns in the past with incorrect reporting of self-managed care hours, this particular service component is reviewed for reasonableness.

The activity data used for 1999-00 funding is the HCIS 1997-98 hours paid, excluding services provided under the Children With Complex Health Needs program, which are funded through Province Wide Services.

Self-managed care was valued at actual costs. Costs for each of the six general service types (assessment, case co-ordination, direct professional, personal care, home support, indirect services) were 1997-98 provincial average cost rates calculated by adding up all provider costs (per hour) for all regions and dividing by the total number of providers:

Assessment	-	$29.16
Case Coordination	-	$30.53
Direct Professional	-	$26.59
Personal Care	-	$13.37
Home Support	-	$12.34
Indirect Services	-	$22.42

Only the direct provider costs are included in the calculations. One of the problems with including indirect costs (such as administration, travel costs, management and building depreciation), is that these costs are reported in varying degrees across regions.

e. private clinics

On July 1, 1996, the Alberta Government, in compliance with the Canada Health Act, prohibited the charging of facility fees by private clinics to patients for medically necessary services. For three months (July – September, 1996) facility fees were paid directly by Alberta Health to private clinics. Effective October 1, 1996, however, responsibility was delegated to the RHAs to fund and manage the facility fees associated with insured physician and oral surgeon surgical services. A sum of $4.5 million for facility fee funding was allocated between Capital, Calgary, Headwaters, Chinook and David Thompson RHAs for the remaining sixth months of fiscal year 1996-97 (October - March), to cover the necessary operating costs of providing approved surgical procedures outside the public hospital setting. With this funding, these regions began contracting with private clinics to cover facility fees.

For 1997-98, Private Clinics annual funding was set at $8.0 million, and included in the non-population based component of regional funding. The same regional distribution as for 1996-97 funding was used. Funding amount and allocation for 1998-99 was exactly the same as in 1997-98.

The largest categories of service offered by the private clinics to date have been dental anaesthesia, cataract surgery, abortion and plastic surgery.

For 1999-00, the decision was made to move Private Clinics into population based funding, utilizing data on private clinics (activity with attached PHNs, fees) for 1997-98 provided by four (Capital, Calgary, Headwaters, David Thompson) of the five previously funded regions.

iii. Capitation rates

After the estimated expenditures (activity data with scaled cost weights) for each service category have been calculated, capitation funding rates are derived for each of the 124 demographic groups by summing the expenditures by demographic group and dividing by the total provincial population in that group.

The following table shows the total capitation rate for each of the 124 demographic groups, along with the estimated expenditures by service category and population which are used to calculate the rates. The 1999-00 funding capitation rates, summed across all service pools (except Protection, Prevention and Promotion), vary from $134 per person (*age 10-14 female regular non-premium support*) to $17,051 per person (*age 90+ female*).

1999-00 CAPITATION RATES
(Based on 1997-98 activity and funded costs)

*** *Regular (Non Premium Support)*

Age-Sex		Population	Estimated Expenditures (Total = 1999-00 pool size)						Capita
		31-Mar-98	Inpatient	Amb.Care	LTC	HomeCare	PrivClinic	TOTAL	Rate
<1	F	13,407	18,345,876	1,824,016	0	62,050	1,254	20,233,196	1,509
1 – 4	F	57,510	5,587,845	7,862,303	0	475,269	112,992	14,038,408	244
5 – 9	F	81,044	3,998,841	6,831,283	59,720	431,695	110,430	11,431,969	141
10 – 14	F	84,411	4,356,552	6,649,991	35,701	208,548	93,815	11,344,607	134
15 – 19	F	79,865	10,630,942	10,830,389	0	176,683	337,940	21,975,954	275
20 – 24	F	64,301	15,241,549	10,246,977	0	123,742	389,067	26,001,335	404
25 – 29	F	74,753	27,780,770	13,416,250	35,701	274,361	303,806	41,810,887	559
30 – 34	F	91,722	32,757,336	16,368,064	95,421	667,257	277,169	50,165,246	547
35 – 39	F	109,365	25,656,569	17,914,779	93,111	1,415,295	238,607	45,318,362	414
40 - 44	F	102,745	18,292,071	16,058,602	578,629	1,876,059	169,449	36,974,810	360
45 - 49	F	82,549	16,633,624	13,938,306	691,968	1,752,149	147,698	33,163,745	402
50 - 54	F	64,701	15,481,907	12,301,403	627,323	2,266,235	145,977	30,822,846	476
55 - 59	F	44,021	13,811,269	8,953,723	824,500	2,354,938	124,289	26,068,720	592
60 - 64	F	31,333	12,139,582	7,277,066	1,543,726	1,420,674	165,931	22,546,979	720
65 - 69	F	45,792	32,698,271	13,447,603	8,150,823	6,526,305	431,530	61,254,533	1,338
70 - 74	F	39,629	40,615,824	13,119,939	18,292,662	9,117,093	658,258	81,803,776	2,064
75 - 79	F	32,784	48,429,785	12,705,643	33,720,451	15,264,881	770,130	110,890,889	3,382
80 - 84	F	22,237	45,894,702	8,900,298	55,224,883	18,332,579	569,491	128,921,954	5,798
85 - 89	F	12,580	34,647,635	5,479,005	68,495,271	17,033,645	263,324	125,918,880	10,009
90+	F	6,973	22,219,021	2,740,214	80,036,559	13,811,918	[illegible]	118,897,527	17,051
<1	M	14,132	20,750,207	2,516,908	0	153,672	814	23,421,601	1,657
1 - 4	M	60,775	8,523,527	11,277,943	0	990,852	139,181	20,931,503	344
5 - 9	M	85,085	4,762,078	9,889,451	0	821,641	109,905	15,583,075	183
10 -14	M	89,045	6,541,036	8,786,522	0	548,141	50,604	15,926,304	179
15 - 19	M	84,756	7,694,967	9,648,817	0	336,121	41,253	17,721,158	209
20 - 24	M	74,944	6,924,941	7,430,812	0	213,856	44,350	14,613,959	195
25 - 29	M	80,268	6,477,039	7,625,333	21,709	367,756	70,380	14,562,217	181
30 - 34	M	94,314	8,515,278	9,129,386	0	632,297	96,918	18,373,878	195
35 - 39	M	112,657	11,026,194	11,775,079	131,122	861,278	151,632	23,945,306	213
40 - 44	M	109,318	13,172,470	12,720,374	329,682	1,184,454	141,391	27,548,372	252
45 - 49	M	87,819	13,961,670	11,695,797	711,639	1,037,188	125,933	27,532,227	314
50 – 54	M	69,112	14,169,761	11,210,525	775,313	1,227,931	130,077	27,513,608	398
55 – 59	M	49,058	16,581,054	10,134,967	1,333,576	1,337,202	148,884	29,535,683	602
60 – 64	M	38,093	18,876,186	9,954,788	1,723,511	1,540,399	170,754	32,265,638	847
65 – 69	M	44,625	41,326,752	15,148,177	8,447,533	4,214,791	348,224	69,485,477	1,557
70 – 74	M	34,257	45,005,250	14,086,834	11,523,904	5,691,883	478,751	76,786,622	2,241
75 – 79	M	23,942	45,963,658	11,971,853	19,653,215	6,822,072	512,989	84,923,788	3,547
80 – 84	M	13,840	35,969,058	7,631,713	23,325,663	7,414,823	333,414	74,674,671	5,396
85 – 89	M	6,360	23,137,184	3,787,580	23,728,955	6,811,292	144,474	57,609,485	9,058
90+	M	2,825	10,562,162	1,460,655	20,416,677	5,173,534	37,116	37,650,143	13,327

1999-00 CAPITATION RATES (continued)

*** *Premium Subsidy*

Age-Sex		Population 31-Mar-98	Estimated Expenditures (Total = 1999-00 pool size) Inpatient	Amb.Care	LTC	HomeCare	PrivClinic	TOTAL	Capita Rate
<1	F	2,720	4,007,396	428,121	0	15,275	0	4,450,792	1,636
1 - 4	F	11,806	1,605,665	1,791,579	0	61,853	22,418	3,481,515	295
5 - 9	F	14,517	907,948	1,429,165	0	346,269	17,205	2,700,587	186
10 - 14	F	13,121	1,018,191	1,129,855	0	82,919	2,924	2,233,889	170
15 - 19	F	12,815	2,830,369	2,189,765	0	38,671	54,604	5,113,409	399
20 - 24	F	25,946	7,139,133	4,539,883	35,701	21,151	186,012	11,921,880	459
25 - 29	F	20,949	6,567,734	3,991,857	35,701	83,453	119,133	10,797,878	515
30 - 34	F	15,434	5,234,236	2,951,259	59,720	113,026	56,871	8,415,113	545
35 - 39	F	14,813	4,131,968	2,992,257	59,720	438,422	39,337	7,661,704	517
40 - 44	F	12,502	3,206,802	2,375,541	146,627	383,396	13,775	6,126,142	490
45 - 49	F	9,607	2,582,048	1,843,242	155,142	510,248	13,851	5,104,531	531
50 - 54	F	8,829	2,500,023	1,823,076	274,582	499,329	16,630	5,113,640	579
55 - 59	F	10,196	4,148,717	2,282,660	242,048	666,637	39,551	7,379,614	724
60 - 64	F	14,824	7,287,146	3,491,602	968,671	1,366,222	73,749	13,187,390	890
<1	M	2,855	4,523,098	554,669	0	2,667	0	5,080,434	1,779
1 - 4	M	12,468	2,069,078	2,438,110	0	62,350	25,217	4,594,755	369
5 - 9	M	15,020	1,246,896	2,081,784	0	154,485	18,367	3,501,531	233
10 - 14	M	13,741	1,282,108	1,728,938	0	42,457	1,935	3,055,439	222
15 - 19	M	12,999	1,561,984	1,500,473	0	81,734	8,867	3,153,058	243
20 - 24	M	18,524	1,757,754	1,870,266	0	101,503	13,405	3,742,927	202
24 - 29	M	16,943	1,872,318	1,821,823	0	124,866	13,282	3,832,289	226
30 - 34	M	12,064	1,741,007	1,422,156	35,701	150,188	11,588	3,360,642	279
35 - 39	M	11,562	1,641,489	1,544,810	35,701	207,872	8,589	3,438,461	297
40 - 44	M	10,158	2,123,337	1,555,217	65,198	540,508	13,198	4,297,459	423
45 - 49	M	8,188	2,042,493	1,384,039	113,860	435,790	12,539	3,988,721	487
50 - 54	M	6,784	2,146,194	1,624,388	119,338	443,280	14,844	4,348,043	641
55 - 59	M	6,457	3,332,656	1,730,612	369,901	604,327	19,470	6,056,966	938
60 - 64	M	7,789	6,056,407	2,497,933	432,504	597,538	40,175	9,624,557	1,236

1999-00 CAPITATION RATES (continued)

*** *Aboriginal*

Age-Sex		Population 31-Mar-98	Estimated Expenditures (Total = 1999-00 pool size) Inpatient	Amb.Care	LTC	HomeCare	PrivClinic	TOTAL	Capita Rate
<1	F	1,208	2,330,459	314,702	0	1,833	0	2,646,994	2,191
1 – 4	F	4,988	2,601,494	1,233,302	0	48,183	16,285	3,899,264	782
5 – 9	F	6,353	662,886	734,494	0	6,411	10,171	1,413,962	223
10 – 14	F	5,447	592,370	560,381	0	38,332	2,262	1,193,345	219
15 – 19	F	4,675	2,278,254	979,630	0	13,978	20,931	3,292,793	704
20 - 24	F	4,122	3,122,162	1,309,617	35,701	3,501	37,832	4,508,812	1,094
25 - 29	F	4,463	3,324,209	1,426,250	0	20,698	32,501	4,803,659	1,076
30 - 34	F	4,462	3,039,593	1,430,655	0	81,311	15,714	4,567,273	1,024
35 - 39	F	3,794	2,267,940	1,284,472	35,701	19,644	4,945	3,612,702	952
40 - 44	F	2,844	1,562,769	912,171	0	129,270	1,953	2,606,164	916
45 - 49	F	2,040	1,509,858	767,969	35,701	39,278	2,219	2,355,026	1,154
50 - 54	F	1,592	1,641,865	691,801	166,823	97,287	3,147	2,600,923	1,634
55 - 59	F	1,074	1,258,834	469,098	0	43,103	4,052	1,775,087	1,653
60 - 64	F	788	1,060,884	400,485	163,755	126,148	307	1,751,580	2,223
<1	M	1,177	2,728,814	373,676	0	6,705	0	3,109,194	2,642
1 - 4	M	5,488	3,155,557	1,581,503	0	41,753	26,793	4,805,605	876
5 - 9	M	6,610	820,841	926,913	0	3,370	9,316	1,760,440	266
10 - 14	M	5,736	860,746	627,526	0	28,243	1,866	1,518,381	265
15 - 19	M	4,585	883,527	623,909	0	4,606	555	1,512,597	330
20 - 24	M	3,818	1,132,909	644,138	0	90,396	832	1,868,275	489
25 - 29	M	4,282	1,476,825	875,191	0	7,443	880	2,360,340	551
30 - 34	M	4,215	1,366,367	885,695	59,720	422,070	2,505	2,736,357	649
35 - 39	M	3,666	1,476,420	836,179	119,441	220,438	1,459	2,653,936	724
40 - 44	M	2,660	1,432,487	724,238	71,402	69,451	916	2,298,494	864
45 - 49	M	1,885	1,178,478	606,311	65,198	88,480	2,605	1,941,072	1,030
50 - 54	M	1,431	1,482,130	476,518	0	16,970	2,737	1,978,354	1,382
55 - 59	M	1,109	1,100,075	372,023	0	28,021	874	1,500,994	1,353
60 - 64	M	815	1,118,819	409,004	107,103	47,902	2,966	1,685,795	2,068

1999-00 CAPITATION RATES (continued)

*** *Welfare*

Age-Sex	Population 31-Mar-98	Estimated Expenditures (Total = 1999-00 pool size) Inpatient	Amb.Care	LTC	HomeCare	PrivClinic	TOTAL	Capita Rate
<1 F	921	1,610,773	137,852	0	2,224	0	1,750,848	1,901
1 – 4 F	3,347	662,621	638,566	0	63,925	13,720	1,378,831	412
5 – 9 F	4,494	328,099	612,937	0	42,380	8,533	991,950	221
10 - 14 F	3,952	371,456	426,615	0	17,472	5,993	821,536	208
15 - 19 F	3,845	1,826,414	1,088,484	71,402	90,559	23,008	3,099,867	806
20 - 24 F	3,633	4,039,319	1,904,357	131,122	834,446	39,994	6,949,238	1,913
25 - 29 F	3,541	3,789,921	1,805,131	35,701	1,094,834	34,520	6,760,107	1,909
30 - 34 F	4,042	3,841,820	2,100,731	429,068	1,303,514	21,715	7,696,849	1,904
35 - 39 F	4,642	4,939,088	2,542,391	807,061	1,977,070	14,553	10,280,162	2,215
40 - 44 F	4,031	4,786,036	2,579,205	997,931	1,744,138	10,849	10,118,160	2,510
45 - 49 F	3,377	4,308,980	2,017,237	1,215,304	1,563,457	12,931	9,117,909	2,700
50 - 54 F	3,118	3,342,204	1,832,468	1,722,251	1,747,356	9,282	8,653,561	2,775
55 - 59 F	2,772	3,483,228	1,394,757	1,834,097	1,401,252	16,803	8,130,137	2,933
60 - 64 F	2,271	2,775,985	1,133,754	1,896,515	1,347,653	13,490	7,167,396	3,156
<1 M	965	1,711,433	216,739	0	53,815	0	1,981,986	2,054
1 - 4 M	3,556	1,028,330	912,165	0	74,658	15,512	2,030,665	571
5 - 9 M	4,691	635,514	922,481	0	75,662	12,521	1,646,178	351
10 - 14 M	4,155	567,529	562,330	0	128,469	2,125	1,260,454	303
15 - 19 M	3,819	1,447,089	936,612	0	197,888	5,164	2,586,753	677
20 -24 M	2,165	1,971,222	1,011,325	250,563	1,259,905	3,209	4,496,224	2,077
25 - 29 M	2,232	2,147,933	1,192,202	220,339	1,358,540	5,257	4,924,271	2,206
30 - 34 M	2,930	3,080,297	1,543,444	270,234	2,400,290	4,057	7,298,322	2,491
35 - 39 M	3,591	3,968,162	2,398,938	808,443	1,998,569	9,954	9,184,065	2,558
40 - 44 M	3,433	3,426,401	1,984,207	888,557	1,340,640	6,122	7,645,927	2,227
45 - 49 M	3,110	3,651,745	1,861,642	880,880	1,524,385	7,277	7,925,929	2,549
50 - 54 M	2,788	3,114,264	1,610,255	1,352,106	863,418	9,876	6,949,918	2,493
55 - 59 M	2,568	3,597,216	1,404,868	1,309,091	1,124,648	14,675	7,450,497	2,901
60 - 64 M	2,517	4,242,584	1,364,777	2,262,257	1,045,632	14,579	8,929,827	3,548
Grand Total	2,846,411	1,013,887,872	512,378,771	402,022,531	177,570,619	10,077,895		

iv. Regional allocation

Funding for each region is determined by multiplying the number of individuals in the region in each of the 124 demographic groups by the corresponding capitation rate (estimated provincial average health expenditures per person). Because the capitation rates vary by demographic group, and because the population composition is different in each region, a different *overall* per capita funding level occurs for each Regional Health Authority.

v. Protection, prevention and promotion allocation

The Protection, Prevention and Promotion funding pool covers:

- *Health Protection* - immunizations, communicable disease control, chronic disease programs, environmental health, dental health, community relations, sexual and reproductive care

- *Community Health Services* - community health nursing, family planning, health promotion/education, breast screening, drug awareness, mental heath promotion, pre-natal teaching, public health, nutrition, school health, etc.

In the two previous years, because of inadequate activity and cost data for these public health services, allocation of this funding pool was simply based on each region's share of population-based funding for the other regional health service pools. However, an alternative allocation was implemented this year because it was felt that significantly different demographic factors drive this activity as compared to the other regional health care activities. In particular, while utilization per person for the other regional pool activities is many times greater for the senior population, for Protection, Prevention and Promotion many of the activities are targetted primarily to non-senior age groups, including vaccinations, anti-smoking, drug awareness, pre-natal, school health, sexually transmitted disease and accident prevention programs.

The first step in the new funding methodology was to split the PPP pool ($93.0 million) into four broad age group categories. The proportions were based on the judgement of those involved with these programs:

	% split	Sub-pools ($)
Age 0-14	40%	37,188,722
Age 15-64	17%	15,805,207
Age 65+	13%	12,086,335
All ages	30%	27,891,541
Total	**100%**	**92,971,805**

Next, for each RHA, the population in each of the four broad age groups was broken down into the four socio-economic groups, and then each of these four populations were weighted according to the scheme below. Again, this weighting scheme (relative utilization by socio-economic group) was estimated based on the judgement of those involved with this health service area:

	Weighting
Non Subsidy	1
Subsidy	2
Aboriginal	5
Welfare	5

Finally, the share of each of the four funding sub-pools for each region was determined by its share of the estimated provincial weighted population. This led to the following allocations of the Protection, Promotion and Prevention pool:

1999-00 Funding
Protection, Promotion, Prevention - Pool Allocation

check

RHA	RHA NAME	PPP Allocation	PPP % Share
1	Chinook	5,460,457	5.87
2	Palliser	2,745,884	2.95
3	Headwaters	2,339,337	2.52
4	Calgary	26,316,112	28.31
5	Region 5	1,877,182	2.02
6	David Thompson	6,627,546	7.13
7	East Central	3,306,961	3.56
8	WestView	2,801,519	3.01
9	Crossroads	1,375,638	1.48
10	Capital	25,788,728	27.74
11	Aspen	2,776,026	2.99
12	Lakeland	4,104,571	4.41
13	Mistahia	2,843,261	3.06
14	Peace	718,447	0.77
15	Keeweetinok Lakes	1,449,720	1.56
16	Northern Lights	1,325,709	1.43
17	Northwestern	1,114,708	1.20
	Total	**92,971,805**	**100.00**

Import/Export Adjustment

Because the population-based regional funding allocations described up to this point are based solely on each region's resident population, adjustments must be made to the funding allocations to account for the health care services provided to individuals who cross regional boundaries to receive services. An amount of $320 million is the total valuation of import/export activity identified in the 1999-00 funding allocations. Such activity accounts for over ten percent of all regional health care activity in the province.

i. Identification of import/export activity

The first step in calculating import/export adjustments is to identify import/export (inter-regional) services from the available activity data sets. As previously mentioned, current data coverage of regional health service activities is relatively comprehensive, with only a few gaps currently existing. Import/exports are identified for each of the following service categories:

- hospital inpatient
- hospital ambulatory care
- continuing care
- home care
- private clinics

The import/export adjustments to 1999-00 funding were based on 1997-98 activity data, which were the most recent annual activity data at the time of the funding calculations.

An import/export is identified for any activity where the region of service (as determined by the facility number or service location on the file) is different from the region of patient residence. For services where the region of patient residence is not determinable, it is assumed that they are local cases and not subject to import/export adjustment.

For hospital inpatient services, given that Calgary's forensic psychiatry program has received a funding adjustment outside of population based funding, excluded from import/export were all forensic psychiatry cases from the Peter Lougheed hospital.

For continuing care, identification of import/export is somewhat more complicated than for other regional services. For residents who are classified twice by the Resident Classification System in different facilities, only the second classification is considered. Also, the region of residence for import/export (but not for general funding allocation) is defined as the region in which the person lived (mailing address) one year prior to their admission to the long term care facility. For 1999-00 funding, it was possible to check prior residency for registrations going back to April 1,1984, which covers the large majority of long term care residents. For those records that had a provider RHA identifier differing from the RHA patient identifier

one year prior to admission, an import/export service was identified. For resident records that did not have an Alberta Health Care Insurance Plan registration number one year prior to admission, it is assumed that the patient moved to Alberta and thus no import/export identification is made. The ability of Alberta Health to go back further in checking prior residency was the major factor behind the 31 percent increase in the valued continuing care import/export activity for 1999-00 funding compared to the previous year.

For home care, due to some concerns with the validity of import/export activity derived from the HCIS file, for the first time regions were provided a preliminary file of import/exports (based on 1997-98 HCIS file) for validation prior to the final funding allocations.

For private clinics, population based allocation and import/export were calculated for the first time based on 1997-98 data provided by four (Capital, Calgary, Headwaters, David Thompson) of the five previously funded regions. Thus, import/export did not include imports for the missing region (Chinook).

ii. Valuation of import/export activity

Once the import/export services have been identified, the next step is to cost or value them. For hospital inpatient and ambulatory care, the same standard dollar rates (scaled cost weights) used in determining the regional funding capitation rates are used to value identified import/export services. The rates used for valuing are therefore based on a total pool size equal to the previous year (1998-99) comparable funding. These rates are not estimates of actual cost (average or marginal), but they do relate to the estimated expenditures in the population-based funding allocations.

For ambulatory care activity, Ambulatory Care Classification System (ACCS) data, supplemented by physician fee-for-service data (interim measure as explained in the *Estimated Health Expenditures* section), were used for the first time. The combined file meant that similar services could be valued differently depending on the degree to which a region had complied with ACCS reporting. With the new data set, total valuation of ambulatory care import/export activity increased by 19 percent for 1999-00 funding, compared to the previous year.

For continuing care, the values attached to identified import/exports are the Resident Classification System A to G cost weights (see page 25), less the long term care per capita funding rate (see below) already received by the service region because that person is included in that region's population. As mentioned previously, for general population based funding allocation, patients in long term care facilities on March 31 are considered as residents of the region in which the long term care facility is situated. That region is therefore already the recipient of the general population based funding (total per capita rate) for that person. The long term care component is adjusted out of the import compensation it also receives. Below are the 1999-00 population funding rates - total (excluding Protection, Promotion, Prevention) and long term care components - for the senior population:

		99/00 Per Capita Funding Rates: Total	Long Term Care
Female	65-69	$ 1,338	$ 178
	70-74	$ 2,064	$ 462
	75-79	$ 3,382	$ 1,029
	80-84	$ 5,798	$ 2,483
	85-89	$10,009	$ 5,445
	90+	$17,051	$11,478
Male	65-69	$ 1,557	$ 189
	70-74	$ 2,241	$ 336
	75-79	$ 3,547	$ 821
	80-84	$ 5,396	$ 1,685
	85-89	$ 9,058	$ 3,731
	90+	$13,327	$ 7,227

Thus, the import value for a 92 year old female with a "G" classification, is $56,851 less the long-term care capitation amount of $11,478, which gives a net import/export value of $45,373.

For home care, the values attached to identified import/exports are the 1997-98 provincial average cost rates (see page 26) for each of the six general service activity types, adjusted by a 3.0 percent inflation factor. The scaled cost weights were not used for home care because the scaling factor (representing the relationship between pool size and total costed activity) was exceedingly large, perhaps indicating a less than full activity set (in addition to the exclusion of indirect costs).

For private clinics, the values attached to identified import/exports are the fees identified in the data sets received from the regions, unscaled.

iii. Application of import/export to regional funding allocations

The calculated compensation for a region where the activity is serviced (import), is deducted from the funding of the region where the patient comes from (export). Thus, summed import/export adjustments over all seventeen regions is zero - total imports (positive) equal total exports (negative). However, individual RHAs receive a net gain or loss depending on whether they are a net-exporter or net-importer of regional health services. Both Capital and Calgary RHAs service a lot of activity from the other regions, and are therefore recipients of a large *positive* net import/export adjustment ($115.8 million and $57.9 million, respectively). Net-exporting regions, on the other hand, receive a *negative* net import/export adjustment.

1999-00 Regional Funding

Import / Export (based on 1997-98 activity, 1998-99 dollars)

	Inpatient			Ambulatory Care		
RHA	Import	Export	*Net*	Import	Export	*Net*
1	4,800,968	8,132,235	(3,331,268)	2,593,790	3,662,598	(1,068,807)
2	1,836,585	7,856,767	(6,020,183)	1,105,626	3,380,998	(2,275,372)
3	2,006,676	13,848,882	(11,842,206)	1,561,548	5,770,401	(4,208,853)
4	46,093,125	8,475,037	37,618,089	18,649,878	4,808,088	13,841,790
5	2,600,706	12,111,170	(9,510,463)	974,574	4,893,547	(3,918,973)
6	8,581,909	20,878,270	(12,296,362)	3,642,247	8,770,495	(5,128,248)
7	3,743,506	17,737,333	(13,993,827)	1,643,192	6,803,647	(5,160,456)
8	2,077,517	19,149,843	(17,072,326)	1,932,640	8,906,817	(6,974,177)
9	7,153,498	8,223,975	(1,070,476)	3,786,126	3,530,855	255,271
10	96,705,689	12,059,065	84,646,625	40,965,097	7,202,726	33,762,371
11	2,579,544	18,241,269	(15,661,725)	1,252,870	9,075,728	(7,822,858)
12	4,443,111	22,742,801	(18,299,691)	2,609,948	9,109,311	(6,499,363)
13	5,753,482	7,205,330	(1,451,848)	3,044,192	3,258,899	(214,707)
14	1,838,526	4,133,075	(2,294,550)	1,136,553	1,755,516	(618,963)
15	1,062,556	5,356,435	(4,293,879)	608,892	2,267,068	(1,658,176)
16	800,825	2,833,635	(2,032,810)	603,907	1,753,049	(1,149,142)
17	210,637	3,303,737	(3,093,100)	234,156	1,395,492	(1,161,337)
	192,288,859	**192,288,859**	**0**	**86,345,237**	**86,345,237**	**0**

continued next page ....

Import / Export (continued)

	Continuing Care			Home Care		
RHA	Import	Export	Net	Import	Export	Net
1	952,120	1,906,691	(954,570)	158,951	145,501	13,450
2	910,796	732,611	178,185	78,180	67,181	10,999
3	3,595,851	2,285,300	1,310,551	93,526	268,734	(175,208)
4	8,365,659	3,266,238	5,099,421	672,402	524,040	148,362
5	1,103,142	2,012,668	(909,526)	61,868	192,855	(130,987)
6	2,576,324	3,396,387	(820,062)	382,347	274,525	107,822
7	2,580,952	2,146,601	434,351	255,077	308,067	(52,990)
8	434,307	2,189,514	(1,755,208)	124,089	303,869	(179,780)
9	944,432	1,178,323	(233,890)	654,126	167,200	486,926
10	6,930,441	10,014,263	(3,083,823)	1,019,073	1,450,114	(431,041)
11	1,995,548	1,957,553	37,996	244,422	219,789	24,633
12	2,679,285	1,837,006	842,279	360,540	180,609	179,931
13	761,403	980,606	(219,203)	155,703	76,843	78,860
14	901,058	225,311	675,747	53,696	46,837	6,859
15	208,648	537,461	(328,814)	28,308	67,379	(39,071)
16	56,162	97,435	(41,273)	7,706	16,043	(8,337)
17	0	232,161	(232,161)	2,264	42,694	(40,429)
	34,996,129	**34,996,129**	**0**	**4,352,281**	**4,352,281**	**0**

	Private Clinics			TOTAL		
RHA	Import	Export	Net	Import	Export	Net
1	0	143,537	(143,537)	8,505,830	13,990,562	**(5,484,733)**
2	0	121,951	(121,951)	3,931,187	12,159,509	**(8,228,322)**
3	50,500	271,796	(221,296)	7,308,101	22,445,113	**(15,137,012)**
4	1,274,066	62,694	1,211,372	75,055,130	17,136,098	**57,919,033**
5	0	251,914	(251,914)	4,740,291	19,462,154	**(14,721,863)**
6	423	472,549	(472,126)	15,183,250	33,792,226	**(18,608,976)**
7	0	172,450	(172,450)	8,222,728	27,168,099	**(18,945,371)**
8	0	142,926	(142,926)	4,568,552	30,692,969	**(26,124,417)**
9	0	83,298	(83,298)	12,538,182	13,183,650	**(645,468)**
10	937,120	50,667	886,453	146,557,420	30,776,834	**115,780,586**
11	0	141,978	(141,978)	6,072,385	29,636,317	**(23,563,932)**
12	0	173,418	(173,418)	10,092,883	34,043,145	**(23,950,262)**
13	0	69,458	(69,458)	9,714,781	11,591,137	**(1,876,357)**
14	0	19,607	(19,607)	3,929,833	6,180,346	**(2,250,513)**
15	0	31,451	(31,451)	1,908,404	8,259,794	**(6,351,390)**
16	0	42,364	(42,364)	1,468,601	4,742,526	**(3,273,926)**
17	0	10,050	(10,050)	447,057	4,984,134	**(4,537,077)**
	2,262,108	**2,262,108**	**0**	**320,244,615**	**320,244,615**	**0**

Non-Population Based Funding

Overview

Some components of general regional funding are not subject to the population based allocation methodology. These components are:

1999-00 Non-Population Based Funding

RHA	*Community Laboratory Services*	*Community Rehab*	*Assured Access*	*Alternate Pay*	*Veterans*	*Cost of Doing Business*
1 – Chinook	2,639,209	2,228,588	649,450	445,155	0	0
2 – Palliser	1,829,487	1,334,161	1,570,344	28,401	0	0
3 – Headwaters	990,458	928,732	434,194	0	0	0
4 – Calgary	23,928,522	11,647,616	0	5,170,607	4,109,010	0
5 – Region 5	601,629	732,046	1,198,925	0	0	0
6 - David Thompson	2,977,616	2,552,168	340,613	53,636	0	0
7 - East Central	1,582,578	1,628,983	1,862,131	0	0	0
8 – Westview	1,623,559	1,247,800	1,020,094	0	0	0
9 – Crossroads	660,077	592,486	18,988	0	0	0
10 – Capital	24,370,401	12,243,050	0	4,062,483	3,510,011	0
11 – Aspen	850,546	1,308,905	1,040,244	0	0	0
12 – Lakeland	881,095	1,055,190	736,056	0	0	0
13 – Mistahia	925,507	1,194,722	3,030,831	0	0	3,441,898
14 – Peace	203,409	351,066	1,360,319	0	0	987,116
15 – Keeweetinok	207,484	330,000	1,726,506	0	0	813,288
16 – Northern Lights	818,195	555,055	693,819	16,024	0	1,176,788
17 – Northwestern	100,812	330,000	2,942,869	0	0	593,903
TOTAL	**65,190,584**	**40,260,568**	**18,625,381**	**9,776,306**	**7,619,021**	**7,037,994**

continued ....

1999-00 Non-Population Based Funding (continued)

RHA	*Rosehaven*	*STD/TB Clinics*	*Lloyd. Hosp Agreement*	*ICU Funding*	*HIV Viral Load Testing*	*Emerging Drugs*
1 – Chinook	0	0	0	0	0	0
2 – Palliser	0	0	0	0	0	0
3 – Headwaters	0	0	0	0	0	0
4 – Calgary	0	1,210,724	0	0	325,000	325,000
5 – Region 5	0	0	0	0	0	0
6 – David Thompson	0	0	0	0	0	0
7 – East Central	6,607,410	0	1,000,000	0	0	0
8 – Westview	0	0	0	0	0	0
9 – Crossroads	0	0	0	0	0	0
10 – Capital	0	1,263,539	0	0	325,000	325,000
11 – Aspen	0	0	0	0	0	0
12 – Lakeland	0	0	0	0	0	0
13 – Mistahia	0	0	0	500,000	0	0
14 – Peace	0	0	0	0	0	0
15 – Keeweetinok	0	0	0	0	0	0
16 – Northern Lights	0	0	0	500,000	0	0
17 – Northwestern	0	0	0	0	0	0
TOTAL	**6,607,410**	**2,474,263**	**1,000,000**	**1,000,000**	**650,000**	**650,000**

RHA	*STD Educ/Contact Tracing*	*Costing Project*	*1 – 800 Information Line*	*Transfer Clin.Invest. Unit*	**TOTAL**
1 – Chinook	51,019	75,000	0	0	**6,088,421**
2 – Palliser	30,188	0	0	0	**4,792,581**
3 – Headwaters	23,545	0	0	0	**2,376,929**
4 – Calgary	79,500	75,000	0	0	**46,870,979**
5 – Region 5	18,084	0	0	0	**2,550,684**
6 – David Thompson	62,581	75,000	0	0	**6,061,614**
7 – East Central	36,068	0	0	0	**12,717,170**
8 – Westview	30,177	0	0	0	**3,921,630**
9 – Crossroads	13,414	75,000	0	0	**1,359,965**
10 – Capital	91,395	75,000	100,856	(10,000)	**46,356,735**
11 – Aspen	28,576	0	0	0	**3,228,271**
12 – Lakeland	37,230	0	0	0	**2,709,571**
13 – Mistahia	91,701	75,000	0	0	**9,259,659**
14 – Peace	3,301	0	0	0	**2,905,211**
15 – Keeweetinok	4,097	0	0	0	**3,081,376**
16 – Northern Lights	5,987	0	0	0	**3,790,868**
17 – Northwestern	2,888	0	0	0	**3,970,472**
TOTAL	**609,751**	**450,000**	**100,856**	**(10,000)**	**162,042,134**

Non-Population Based Funding Items

Community Laboratory Services ($65,190,584)

Alberta's laboratory service system was restructured in July 1995 to consolidate lab testing services (excluding services provided by the Provincial Laboratories of Public Health) under RHA authority. It became the responsibility of regions to provide lab testing services either through direct service delivery, or contractual arrangements with private providers or other RHAs. Lab tests for non-hospital patients (physician referrals), until then reimbursed through the AHCIP fee-for-service E-code, were de-listed, and $65.2 million from the AHCIP E-schedule transferred to RHA funding. Regional allocations of this amount were based on the distribution of physician requests for lab services by resident region (where the test originated) prior to restructuring.

This Community Lab (non-hospital physician-contracted services) allocation has remained unchanged to date. Funding has not been subject to population based allocation because of insufficient data. Some community lab activity/costing information has become available from Capital, Chinook and Mistahia. However, given its limitations, including the difficulties of regions in providing lab test data by region of patient residence and the lack of comprehensive activity data for import/export, the $65.2 million allocation remains unchanged.

Community Rehabilitation ($40,260,568)

The Community Rehabilitation Program was implemented in July 1995 to replace physical therapy services provided on a fee-for-service basis, and consolidate several rehabilitation services into the regional system. Physical therapy was de-listed from the AHCIP, and RHAs became responsible for the management and delivery of community-based rehabilitation services - physiotherapy, audiology, occupational therapy, respiratory services and speech-language pathology - in accordance with the provincially established CRP policy framework.

At that time, funding of $40.3 million - from the physical therapy budget of the AHCIP, plus the existing speech-language pathology budget in health units, plus additional reallocated dollars - was reallocated to regions. The determined distribution of funding among RHAs was considered to be equitable, with a large portion of the dollars allocated on the basis of the provincial average utilization by age group. The relative age-specific weights, calculated from 1992-93 data (the last year before capping strategies affected utilization), were applied to the region specific population (1991 Census).

Community Rehabilitation funding is not currently subject to population based funding because of inadequate data being collected for these activities. The amount of $40.3 million continues to be allocated to regions on the historical basis.

Assured Access ($18,625,381)

Assured Access special funding is provided to qualifying regions in recognition of the greater service delivery costs associated with sparsely populated areas. Regions receive an additional percentage of the per capita funding rate for each of their residents living outside of population circles (50-kilometre radius) in their region with a population concentration of at least 5,000.

Some changes were made to the way the Assured Access adjustment was calculated for 1999-00 funding. In the two previous funding years, population centre sizes of 5,000 or more were identified via postal code assignment of the registry population, and then 50 kilometre circles were drawn around these centres. However, this calculation method proved inequitable in situations where postal codes covered a large geographic area.

To improve equity, measurement of the 5,000 population threshold is now based on 1996 Census data. This includes drawing circles (50 km radius) around:

1. all municipalities (as defined by the Census Subdivisions types "City" and "Town") with a population of over 5,000
2. Sherwood Park and Fort McMurray (Census Subdivision type "Specialized Municipality")
3. population "hubs" (the largest municipality in an area with a population of 1,000 - 5,000) where a 50 kilometre radius catchment area captures a population of 5,000 or more, within the same region; the population count for the catchment area is the 1996 Census Enumeration Area population counts (Statistics Canada, *GeoRef, 1996 Census*, 92F0085XCB) as assigned to geographical points designated by Statistics Canada as the Enumeration Area Representative Point (centroid).

The drawing of the circles (50 km and 80 km radius) around the population centres remains essentially the same. Rather than a circle, Edmonton, Calgary and other major centres have their municipal boundaries extended outward by 50 and 80 kilometres.

The population outside of the 50 kilometre radius and 80 kilometre radius which qualify for an Assured Access adjustment is also now the census enumeration area count, instead of registry population assigned by postal code. Special consideration was given to the Crossroads region as no enumeration area representative points for that region fall within their identified 50+ kilometre buffer area. To accommodate this anomaly, the remote population count for Crossroads is the pro-rated portion of the remote township population, based on Statistics Canada TRM (Township/Range/Meridian) Counts, rather than the Enumeration Area count. This required a pro-ration of five different townships.
All regions contain some identified remote population except Calgary and Capital (see table below). The regions with the highest percentage of remote population are Northwestern (50%), Peace (29%) and Keeweetinok Lakes (19%).

Remote Population

RHA	RHA NAME	Population 50-80 km from designated centres	Population 80+km from designated centres	Total Remote Population
1	Chinook	2,580	386	2,966
2	Palliser	3,137	2,484	5,621
3	Headwaters	2,191	25	2,216
4	Calgary	0	0	0
5	Region 5	5,192	498	5,690
6	David Thompson	1,510	124	1,634
7	East Central	8,717	447	9,164
8	WestView	5,265	0	5,265
9	Crossroads	98	0	98
10	Capital	0	0	0
11	Aspen	5,369	0	5,369
12	Lakeland	3,799	3	3,802
13	Mistahia	4,111	5,766	9,877
14	Peace	4,669	1,176	5,845
15	Keeweetinok	907	4,002	4,909
16	Northern Lights	571	1,502	2,073
17	Northwestern	4,135	5,527	9,662
	Total	**52,251**	**21,940**	**74,191**

The funding adjustments for remote population remain the same as in prior years. For individuals residing beyond 50 but less than 80 kilometres from a designated population centre, the adjustment is equal to 25 percent of their capitation funding rate. For individuals residing in locations more than 80 kilometres away, the adjustment is 50 percent of the per capita funding rate, as in previous years.

Alternate Pay Program ($9,776,306)

With regionalization, Alberta Health contracts with individual physicians were divested to the appropriate regions, along with special funding to cover the contracts. These payments have remained unchanged to date, and go to Calgary ($5.2 million), Capital ($4.1 million), Chinook ($0.4 million), David Thompson ($53,636), Palliser ($28,401) and Northern Lights ($16,024).

Veterans ($7,619,021)

Special funding to Calgary – Colonel Belcher ($4.1 million), and Capital – Mewburn Veterans Centre ($3.5 million), was originally allocated as a non-population based funding item because of potential federal Veterans Affairs funding which was under discussion at the time. This non-population based allocation has continued. The services provided in these facilities are not included in the activity data used for population based funding and import/export adjustment. Construction of some beds was completed with federal funding, but given that no further funding is expected, this is a candidate for inclusion into population based funding in future years.

Cost of Doing Business ($7,037,994)

In recognition of the high cost of travel, supplies and utilities for RHAs located more than 300 kilometres from a major city (applies to the five Northern regions), a special funding adjustment is provided equal to 25 percent of the region's estimated supplies budget (estimated at 20 percent of their total budget).

Rosehaven Care Center ($6,607,410)

The Rosehaven facility in East Central (Camrose) provides 100 beds and a specialized program service to people with geriatric psychiatry or behavior management needs. Rosehaven was operated directly by Alberta Health until December 1992. About 70 percent of the people served by this program are from outside East Central Region. Given this provincial focus, funding was initially placed outside of population-based allocation and funded as a provincial program. However, the intent is to roll this component into population-based funding in future years, with appropriate import/export to compensate East Central for out-of-region servicing.

Clinical STD/TB Services ($2,474,263)

Payments for the TB and STD (Sexually Transmitted Diseases) clinical services go to

Calgary ($1.2 million) and Capital ($1.3 million). These public health programs are provincial in scope. The STD clinic was operated directly by Alberta Health until transferred to the Capital Health Authority in January 1997.

Lloydminster Hospital Agreement ($1,000,000)

This is to be the last year for this non-population based funding allocation to East Central. Funding is to be rolled into general population based funding next year based on the collection of Alberta personal health care numbers for patients at the Lloydminster hospital starting 1998-99.

ICU Funding ($1,000,000)

Beginning 1998-99, ICU special funding is provided to Mistahia ($500,000) and Northern Lights ($500,000).

HIV Viral Load Testing ($650,000)

Beginning with 1997-98 funding, a sum of $325,000 was provided to each of Calgary and Capital for HIV viral load testing. This was subsequently labelled as funding for Emerging Drugs, given the use it was put to.

Emerging Drugs ($650,000)

Payments for emerging drugs (transferred from Blue Cross Non-Group) are allocated to Calgary ($325,000) and Capital ($325,000).

Other ($1,150,607)

Other Non-Population Based Funding items include:

- $609,751 to all regions for STD education and contact tracing
- $450,000 to the six costing regions
- $100,856 to Capital for the 1-800 Information Line (AIDS hotline)
- ($10,000) deducted from Capital for the transfer of the Clinical Investigation Unit.

APPENDIX A

Alberta Health

Expenditure Allocation Analysis Methodology

All cost allocations are done on a facility specific basis and then added up to the RHA level. For example, 71410 - Clinical Laboratory is allocated by facility and if a particular facility has not reported any Procedures then only that facility's costs are reported under ERROR NO STATISTICS.

Administration & Support 711

Allocation based on percentage of absorbing cost centre expenditures. Absorbing cost allocations are done for all facilities other than Corporate Administration. Corporate Administration is allocated based on the resulting absorbing cost centre expenditures.

Inpatient Nursing 712

All Inpatient Nursing functional centres are included under Acute In-Patient except for the following. Operating Room 71260 is prorated between Acute In-Patient and Acute Emergency based on I/O cases. Long Term Care 71295 in combined facilities is under Continuing Care.

Ambulatory Care 713

Included under Acute Emergency are:

- Ambulatory Care Administration 71305
- Medical Resources 71307
- Emergency 71310
- Poison Information Centre 71320

Included under Acute Day Procedures:

- Day/Night Care 71340
- Pediatric Day/Night Care 71341

Included under Clinics are:

- Clinics 71350
- Psychiatry Ambulatory Care Services 71395

Included under Private Clinics is:

- Private Clinics 71355

Included under Home Care is:

- Home Care 71360

Included under Promotion, Prevention, Protection & Community Care are:

- Community Health Services 71370
- Health Protection 71375

Diagnostic & Therapeutic 714

71410 - Clinical Laboratory

Allocated based on I/P, O/P and Referred In Procedures into Acute Inpatient, Acute Emergency and Referred In Clinical Laboratory. The Calibration & Staff Health Procedures (FAI71410C) are allocated based on the above split.

71415 - Diagnostic Imaging

Allocated based on Procedures into Acute In-Patient and Acute Emergency.

71420 - Radiation Oncology

Included under Acute In-Patient

71425 - Electrodiagnosis

Included under Acute In-Patient

71430 - Other Diagnostic Lab

Included under Acute In-Patient

71431 - Orthopics

Included under Acute In-Patient

71435 - Respiratory Therapy

Allocated based on I/P and O/P Procedures to Acute In-Patient and Acute Emergency. If no Procedures are reported the total cost will be under ERROR NO STATISTICS.

71440 - Pharmacy

Allocated into the cost envelopes based on the percentage of drug costs (financial secondaries 465 & 565) in each column.

71445 - Clinical Nutrition

Allocated to Acute In-Patient and Acute Emergency based on the ratio of I/P and O/P units.

71449 - Phys Med & Rehab Med

Included under Acute In-Patient

71450 - Physiotherapy

Costs are allocation using the following progression between Acute In-Patient and Acute Emergency:

1. Workload
2. Patient Activity

Inpatient 100%, if no information is provided by the facility

71455 - Occupational Therapy

Costs are allocation using the following progression between Acute In-Patient and Acute Emergency:

1. Workload
2. Patient Activity

Inpatient 100%, if no information is provided by the facility

71460 - Aud & Sp/Lang Path.

Costs are allocation using the following progression between Acute In-Patient and Acute Emergency:

1. Workload
2. Patient Activity

Inpatient 100%, if no information is provided by the facility

71465 - Rehab Engineering

Included under Acute In-Patient

71470 - Social Work
Allocated based on Attendance Days into Acute In-Patient and Acute Emergency
71475 - Psychology
Allocated based on Attendance Days into Acute In-Patient and Acute Emergency
71480 - Pastoral Care
Included under Acute In-Patient
71485 - Recreation
Allocated based on Attendance Days into Acute In-Patient and Acute Emergency
71490 - Child Life
Allocated based on Attendance Days into Acute In-Patient and Acute Emergency

Medical Services 716
All Medical Services are included under Acute Inpatient.

Research 717
All Research is included under Residual.

Education 718
All Education is included under Residual.

Ancillary Operations 719
All Ancillary Operations are included under Residual.

Undistributed 8*9
All Undistributed is included under Residual.

Special Programs 91
Action For Health 91380 is under Promotion, Prev, Protect & Community Care.

Continuing Care
All costs for Long Term Care facilities are included, by functional centre, under Continuing Care including Diagnostic & Therapeutic costs (714).

Province Wide Services
Province Wide Services were deducted using RHAs' 1997/98 reported expenditures.

Non-Population Based Funding
Deducted based on RHAs' reported expenditures.

Offset Revenue
Offset revenue which consists of Fees and Charges is deducted based on the following methodology:

- All offset revenue collected by Long Term Care facilities is included under Continuing Care. For combined facilities the revenue was calculated using an average daily accommodation rate.

- Offset revenue collected by all other facilities is split 67.3% Acute Inpatient and 36.3% Acute Emergency

Offset revenue reported in MIS cannot be differentiated as to source therefore the split was calculated based on average 1994/95 HS1/HS2 data.

APPENDIX B

Acute Inpatient RVI Methodology

One of the most important data goals of Alberta's population-based funding has been to generate hospital service cost weights based on actual Alberta costs as opposed to having to rely on U.S.-based prices (cost proxies). Alberta hospital-specific case-specific costs from costing regions have been collected and converted to *relative values* (RVIs) for funding using the Hospital Specific Relative Value (HSRV) methodology. The funding pool size is then used to determine a provincial average cost weight for a relative value of one.

The HSRV Methodology

Costed cases are first assigned to grouped activity cells (RGNs). All low volume (less than 5 cases) grouper cells are topped up with either last year's (1996-97) cost data, Ontario costs, or Maryland costs (note: the top-up of low volume cells has a very small impact on the funding allocations because the low volume RGNs account for a very small percentage of the total inpatient morbidity file cases). Alberta relative values are then derived by Alberta Health using a three-stage methodology:

1. the RGN average costs for each hospital are used to build a set of relative RGN values for **each hospital** (or HSRVs);

2. an initial *province wide average* relative scale is calculated by simply taking a weighted average (weighted by the number of cases for each hospital) of hospital HSRVs for each RGN;

3. an adjustment is made to each hospital's HSRV scale to account for differences in Case Mix by hospital because RVIs are dependent on the distribution of cases (the distribution of cases affects the total average cost, which is used in calculating the individual RVIs); this requires that a Case Mix Index be calculated for each hospital (hospitals treating a more severe mix of patients get a higher CMI), which is then used to adjust each hospital's HSRV scale; several iterations may be required before a final system-wide set of relative values is arrived at.

The HSRV methodology was deemed by the Population-based Funding Implementation Committee (December 5, 1997 meeting) to be a better approach than the Classical approach.

Why the HSRV approach is better than the Classical approach

The *Classical* approach simply averages the cost data from all reporting hospitals, and then calculates relative values from these average RGN costs. The methodology is comparatively easy to understand. The average cost for any one RGN mostly reflects the costs of the costing hospitals with the most cases for that RGN.

The *HSRV* approach attempts to filter out the varying levels of efficiency in costing hospitals, and is consequently a little more complicated. It first calculates a set of relative values for each hospital, and then averages these sets of relative values, adjusting for differing hospital case mixes. Because the averaging is performed on the relative values for each hospital (compared to costs in the Classical approach), the varying levels of efficiency of reporting hospitals do not impact on the calculations. This is because the **relative** values for any one hospital do not in any way reflect the overall efficiency of that hospital, whereas average costs obviously do reflect varying efficiencies.

EXAMPLE: Two hospitals provide cost data. One is a rural hospital, the other a large urban hospital with lower efficiency (higher costs per unit of output) and a greater proportion of high-end expensive cases. The *Classical* approach simply averages the two sets of costs (weighted by the number of cases in each hospital) and then calculates RVIs from the average costs. The *HSRV* approach calculates a set of RVIs for both hospitals, then averages the two sets of RVIs (weighted by number of cases), and then adjusts for differing case mixes. The HSRV approach calculates a lower RVI for the high-end cases. The Classical approach overstates the RVI for high-end cases because it gives a greater weighting to the more costly urban hospital for these services, because the urban hospital has a higher proportion of the high-end services.

Because only the relative values of hospitals are averaged in the HSRV approach, it makes no difference if one hospital is more or less costly (overall) than another - in this way varying cost differences of hospitals get factored out. The HSRV methodology thus allows system-wide relative values to be developed that are independent of the relative efficiency of the hospitals. This is particularly important given that only six out of the seventeen health regions are participating in the provincial costing project, and therefore the sample may be biased. For the same reasons, the HSRV approach also has the ability to combine data across years without having to adjust for inflation.

Adjustment for ALOS

For the population-based funding allocations, the RVIs generated by Alberta Health using the HSRV methodology are also adjusted for average length of stay (ALOS) differentials between the costing database and the provincial average (note: this type of adjustment is required no matter which of the two general methodologies is employed to derive relative values). The adjustment is only made to the variable proportion of the cost weights and not the fixed proportion.

To account for the ALOS differentials between the costing database and the provincial average, Alberta Health splits the RVIs into fixed and variable proportions using the assumption that fixed costs are 30 per cent of total costs for the more severe cases and 70 percent for the less severe cases. The following adjustment formula is then used:

adjusted RVI = RVI(fixed portion) + RVI(variable portion)*(Prov ALOS/9-facility ALOS)

Where ALOS is not available from the costing project (approximately 100 RGN cells), then no adjustment is made.

APPENDIX C

1999-00 Regional Funding Calculations:

Changes from 1998-99 Funding

1998/99 Funding	1999/00 Funding
Population Based Funding	
Funding Pool Sizes	
1. distribution based on 1996-97 MIS (9 reporting regions)	1. distribution based on 1997-98 MIS (14 reporting regions) 2. non-pop funding excluded from expenditure categories in deriving pool shares 3. new *private clinics* allocation pool
Population	
1. registry population as of March 31, 1997 used as basis of allocation (Jan.12,1998 announcement) 2. to compensate for population growth, an additional $31.9M was provided (Apr.2,1998) to bring population up to Dec.31, 1997, and then another $37.3M (Oct.14,1998) to bring population up to Sept.30, 1998 (projection)	1. registry population as of March 31, 1998 used as basis of population-based allocation 2. additional funding for population growth to September 30, 1999 based on population growth rates from March 31, 1997 to March 31, 1998, scaled to produce an overall population increase of 2.2% (expected population growth for 1999-00), and then applied to March 31, 1998 population

continued ....

Expenditure Allocation:	
Activity Data 1. 1996-97 activity data 2. *ambulatory care*: FFS data	1. 1997-98 activity data 2. *ambulatory care*: a combined ACCS (2.4 million records) and FFS (0.4 million records) file 3. *private clinics*: activity data supplied by 4 of the 5 previously funded regions
Cost Data 1. *hospital in-patient*: cost weights based on 1996-97 Alberta data (90,000 costing records) 2. *ambulatory care:* cost weights were FFS dollars	1. *hospital in-patient*: cost weights based on 1997-98 Alberta data (114,000 cost records) 2. *ambulatory care*: cost weights for ACCS activity are ACCS average costs; FFS records valued from special pool size calculated as the residual after ACCS costed activities are subtracted from the ambulatory care total pool 3. *continuing care*: A to G values increased by 3% 4. *private clinics*: fee data supplied by 4 of the 5 previously funded regions
PPP Allocation allocation based on each region's share of funding for other regional service pools	allocation based on age profile (40% age 0-14, 17% age 15-64, 13% age 65+, 30% all ages), and a socio-economic utilization weighting, based on judgement factors
Import/Export 1. based on 1996-97 activity data	1. based on 1997-98 activity data 2. *inpatient*: forensic psychiatry services excluded from activity; CHA angioplasty cases (PWS) excluded 3. *ambulatory care*: replacement of FFS with combined ACCS/FFS file; PTCA transfers excluded from ACCS 4. *LTC*: able to go back further (1984) in determining residency (one year prior to admission) for import/export 5. *NARG/SARG*: combined with inpatient
Non-population Based Funding 1. *Assured Access*: determination of population centre of 5,000 or more, and qualifying remote population, based on postal code assignment of registry population 2. *private clinics*: historical allocation	1. *Assured Access*: population catchment area of 5,000 or more based on census population (EA) count within a 50 km radius and also in same region; remote population also census EA count 2. *Emerging Drugs*: funding increased 3. *private clinics*: see above for population based funding